

REMARKS

Applicants appreciate the thorough examination of the present application that is evidenced in the Official Action of July 18, 2006 (the "Official Action"). For the reasons discussed below, Applicants respectfully request reconsideration of the present application and submit that the claims are allowable over the art of record.

1. Status of the Claims

Claims 21-28 are pending in the present application. Claims 21-23 and 26-28 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent Publication No. 2006/0125057 to DiCioccio et al ("DiCioccio"). Claims 24 and 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over DiCioccio in view of admitted prior art.

2. The Claims are Patentable Over the Cited Reference

The Official Action states that the method of DiCioccio "appears to be the same as that of the invention method for forming the substrate as described in the summary (sic) of the specification." Official Action, p. 2. Therefore, the Official Action concludes, the substrate formed by DiCioccio would include a carrot defect "having a nucleation point in the vicinity of an interface between the substrate and the epitaxial layer, wherein the carrot defect terminates within the epitaxial layer." Id.

Applicants respectfully submit that the method described in DiCioccio is very different from the methods described in the present specification for obtaining termination of carrot defects. In particular, nowhere does DiCioccio describe growing an epitaxial layer of silicon carbide, etching the grown epitaxial layer of silicon carbide, and growing a second layer of epitaxial silicon carbide on the etched first layer of silicon carbide.

Instead, DiCioccio describes growing epitaxial layers of silicon carbide on a layer 3 of silicon carbide that has been removed by a SIMOX process and bonded on a support member through a layer of silicon oxide as described in U.S. Patent No. 6,391,799. The layer 3 of silicon carbide is described by DiCioccio not as an epitaxial layer, but as a "thin layer" or a "transferred layer." Thus, the layer 3 of silicon carbide is not an epitaxial layer as recited in

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Claim 21, and, further, is not an epitaxial layer on a bulk layer of silicon carbide as recited in Claim 22.

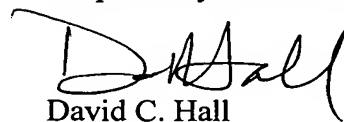
DiCioccio describes the growth of various polytypes of SiC on the thin SiC layer 3. While DiCioccio discloses polishing or etching the layer 3 prior to epitaxial growth thereon in order to improve the surface of the thin layer (DiCioccio, par. 39), such steps are analogous to conventional methods of surface preparation of bulk semiconductor layers prior to epitaxial growth. DiCioccio does not disclose growing an epitaxial layer, etching the epitaxial layer, and growing a second epitaxial layer on the etched first epitaxial layer. Therefore, it does not follow that the structure of DiCioccio would include a terminated carrot defect within an epitaxial layer as recited in Claim 21 and/or Claim 22. Notably, DiCioccio does not mention the presence or absence of carrot defects in SiC.

Dependent Claims 23-28 are patentable at least per the patentability of Claim 22 from which they depend. Furthermore, Applicants have introduced new Claim 29, which is submitted to be patentable at least per the patentability of Claim 22.

CONCLUSION

In light of the above amendments and remarks, Applicants respectfully submit that the above-entitled application is in condition for allowance. Favorable reconsideration of this application is respectfully requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

Respectfully submitted,



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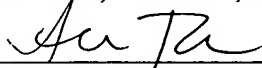
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Amelia Tauchen